



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**D4276-1**

**Job Sheet 180389**



Part No: D4276-1

Job Qty: 1 ea

Part Name: Aft Beam



Part Weight: 0 lbs

Job Created: 7/5/18

Due Date: 7/11/18

Type: SOLD

Status: Scheduled

Priority: Medium

Job Tracking No: GLOSS BLACK

Created By: Linda Lacelle

Description:

Note: DWG REV A IPP REV:A NEW ISSUE 10-11-17 JLM VERIFIED BY:DD IPP rev:B 10.12.02 AS PER DWG  
REV:A DD verf:EC

Ship Via:

### Bill of Materials

### Job Routing

| Op No | Operation              | Qty   | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |             | Sign-off        |
|-------|------------------------|-------|------------|----------|-----------|---------|-----------------------|-------------|-----------------|
|       |                        |       |            |          | Setup hrs | Run Hrs | Workcenter / Supplier | Lead Time   |                 |
| 90    | Start up Operation     | 1 Ea  | 7/11/18    | 7/11/18  | 0.00      | 0.00    | Start Up Machining-2  |             | DAS 18/07/13    |
| 100   | Bandsaw                | 1 pcs | 7/11/18    | 7/11/18  | 0.00      | 0.02    | Bandsaw1              |             | 52 18/07/13     |
| 110   | CNC Vertical Machining | 1 pcs | 7/11/18    | 7/11/18  | 0.58      | 1.79    | HAAS1-4               |             | 9-89 18/07/13   |
| 120   | QC                     | 1 pcs | 7/11/18    | 7/11/18  | 0.00      | 0.00    | QC2 Machining-2       |             | 18/07/13        |
| 130   | QC                     | 1 pcs | 7/11/18    | 7/11/18  | 0.00      | 0.00    | QC8 Machining-2       |             | 18-07-16        |
| 140   | HandFinish             | 1 pcs | 7/11/18    | 7/11/18  | 0.00      | 0.12    | HandFinish1           |             | SA 18-07-16     |
| 145   | Powdercoat             | 1 pcs | 7/11/18    | 7/11/18  | 0.00      | 0.09    | Powdercoat            | Gloss Black | SA 18-07-16     |
| 150   | QC                     | 1 pcs | 7/11/18    | 7/11/18  | 0.00      | 0.00    | QC3                   |             | SA 18-07-16     |
| 180   | Packaging              | 1 pcs | 7/11/18    | 7/11/18  | 0.00      | 0.00    | Packaging3-2          |             | SA 18-07-16     |
| 190   | QC21-SA                | 1 Ea  | 7/11/18    | 7/11/18  | 0.00      | 0.00    | QC21                  |             | DAS 21 18-07-16 |

Part Op 100 - Cut Blank to 36.630"  
Descriptions: 110 - 1-Machine per folio FB007  
145 - MASK AS PER DWG

JUL 17 2018

M B8839 START: 2:45 O.V.T. 3:00 FINISH: 3:15

### Job BOM

| Part / Item          | Component Name          | Quantity             | Operation             | Container          |
|----------------------|-------------------------|----------------------|-----------------------|--------------------|
| M6061T6B1.000X04.000 | 6061-T6 Bar 1.00 X 4.00 | 3.0520 ft (3.052 ea) | 90-Start up Operation | 5090570<br>5091723 |

### Job Allocations

| Operation             | Component Part       | Required | Inventory | Allocated |
|-----------------------|----------------------|----------|-----------|-----------|
| 90-Start up Operation | M6061T6B1.000X04.000 | 3        | 9         | 0         |

### Part Specifications

Specifications could not be found.

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

# WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: \_\_\_\_\_

Part No. \_\_\_\_\_

NCR No. \_\_\_\_\_

Date : \_\_\_\_\_

De \_\_\_\_\_

## AGAINST DEPARTMENT/PROCESS

Water Jet ☐ Engineering ☐  
 Prod. Eng. Coord. ☐ Quality ☐  
 Store/Packaging ☐ Other ☐  
 Supplier ☐

MRB (QSI042) Approval

Completed By

Lead hand / Supervisor  
Approval Verification

QC / QA Coordinator  
Approval

**DART**  
AEROSPACE  
Container No: S091724  
Part: D4276-1  
Job No: 180389  
Serial No/Batch: S091724  
Inspector: \_\_\_\_\_  
Exp Date: \_\_\_\_\_  
Instructions: \_\_\_\_\_  
Date: 07/13/18  
UAT Aerospace Ltd.  
1270 Aberdeen Street  
Chatham, ON K4A 1K7  
TEL: 1 813 632-5200  
Email: sales@dartaero.com  
www.dartaerospace.com

## Root Cause

|                                             |                                                |                                                 |                                                            |                                                |                                               |
|---------------------------------------------|------------------------------------------------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------|-----------------------------------------------|
| Environment <input type="checkbox"/>        | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>        | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>      | Positioned Wrong <input type="checkbox"/>     |
| Design <input type="checkbox"/>             | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>         | Outside Dimensions <input type="checkbox"/>   |
| Doc/Data <input type="checkbox"/>           | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>  | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                 | Over/Under tolerance <input type="checkbox"/> |
| Equip/Tooling <input type="checkbox"/>      | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                 | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                  | Part Incorrect <input type="checkbox"/>       |
| Handling/Pre <input type="checkbox"/>       | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>    | Part Lost/Missing <input type="checkbox"/>    |
| Material <input type="checkbox"/>           | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                  | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>       | Part Moved <input type="checkbox"/>           |
| Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>               | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>               | Drawing <input type="checkbox"/>              |
| Tribal Knowledge <input type="checkbox"/>   | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>             | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>            | Finish <input type="checkbox"/>               |
| LOA <input type="checkbox"/>                | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>     | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>          | Misread <input type="checkbox"/>              |
| Substation <input type="checkbox"/>         | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>          | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/>     |
| Past Expiry Date <input type="checkbox"/>   | Manufacturing Process <input type="checkbox"/> | OTHER : _____                                   |                                                            |                                                |                                               |
| Misidentified <input type="checkbox"/>      | Past Due <input type="checkbox"/>              |                                                 |                                                            |                                                |                                               |



|                                            |  |                     |         |
|--------------------------------------------|--|---------------------|---------|
| <b>DART AEROSPACE LTD</b>                  |  | <b>Work Order:</b>  | 140389  |
| <b>Description:</b> Aft Beam               |  | <b>Part Number:</b> | D4276-1 |
| <b>Inspection Dwg:</b> D4276 <b>Rev:</b> A |  | <b>Page 1 of 1</b>  |         |

### FIRST ARTICLE INSPECTION CHECKLIST

| Drawing Dimension | Tolerance     | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|-------------------|---------------|------------------|--------|--------|----------------------|----------|
| 0.75              | +/-0.030      | 0.75             | ✓      |        | Ver                  |          |
| 20.500            | +/-0.010      | 20.500           | ✓      |        | TAPE                 |          |
| Ø0.381            | +0.000/-0.001 | Ø.380            | ✓      |        | G.P.                 |          |
| 14.380            | +/-0.010      | 14.380           | ✓      |        | TAPE                 |          |
| R0.75             | +/-0.030      | R.075            | ✓      |        | R.G.                 |          |
| 3.50              | +/-0.030      | 3.50             | ✓      |        | Ver                  |          |
| 16.38             | +/-0.030      | 16.38            | ✓      |        | TAPE                 |          |
| 5.00              | +/-0.030      | 5.00             | ✓      |        | TAPE                 |          |
| 0.75              | +/-0.030      | 0.75             | ✓      |        | Ver                  |          |
| 2.75              | +/-0.030      | 2.75             | ✓      |        | Ver                  |          |
| 3.00              | +/-0.030      | 3.00             | ✓      |        | Ver                  |          |
| 1.250             | +/-0.010      | 1.250            | ✓      |        | Ver                  |          |
| 4.50              | +/-0.030      | 4.50             | ✓      |        | Ver                  |          |
| 0.734             | +/-0.010      | .736             | ✓      |        | MIC                  |          |
| 0.108             | +/-0.010      | .108             | ✓      |        | H.G.                 |          |
| 36.38             | +/-0.030      | 36.38            | ✓      |        | TAPE                 |          |
| 0.95              | +/-0.030      | 0.950            | ✓      |        | Ver                  |          |
| 0.60              | +/-0.030      | 0.600            | ✓      |        | Ver                  |          |
| 2.70              | +/-0.030      | 2.70             | ✓      |        | Ver                  |          |
| 1.10              | +/-0.030      | 1.10             | ✓      |        | Ver                  |          |
| 1.25              | +/-0.030      | 1.25             | ✓      |        | Ver                  |          |
| 0.75              | +/-0.030      | 0.750            | ✓      |        | Ver                  |          |
| 3.000             | +/-0.010      | 3.000            | ✓      |        | Ver                  |          |
| 1.500             | +/-0.010      | 1.500            | ✓      |        | Ver                  |          |
| Ø0.191            | +0.005/-0.001 | Ø.193            | ✓      |        | Ver                  |          |
| 2.300             | +/-0.010      | 2.300            | ✓      |        | Ver                  |          |
| 3.50              | +/-0.030      | 3.50             | ✓      |        | Ver                  |          |
| R0.60             | +/-0.030      | R.06             | ✓      |        | R.G.                 |          |
| 1.70              | +/-0.030      | 1.70             | ✓      |        | Ver                  |          |
| 0.65              | +/-0.030      | 0.65             | ✓      |        | Ver                  |          |

|                     |            |                    |          |                              |  |
|---------------------|------------|--------------------|----------|------------------------------|--|
| <b>Measured by:</b> | 52<br>S-89 | <b>Audited by:</b> | D.F.     | <b>Preliminary Approval:</b> |  |
| <b>Date:</b>        | 18/07/13   | <b>Date:</b>       | 18-07-16 | <b>Date:</b>                 |  |

  

| Rev | Date     | Change    | Revised by | Approved |
|-----|----------|-----------|------------|----------|
| A   | 11.08.22 | New Issue | KJ         | M        |

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                      | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Step #: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | MRB (QSI042) Approval                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Description Work Order Deviation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Disposition</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Completed By</b>                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <b>Root Cause</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>FAULT CATEGORY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Environment <input type="checkbox"/><br>Design <input type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Temperature/Cure <input type="checkbox"/><br>Set-up <input type="checkbox"/><br>BOM/Route <input type="checkbox"/><br>Broken/Damage/Defect <input type="checkbox"/><br>Inspection Incomplete/Unqualified <input type="checkbox"/><br>Contamination <input type="checkbox"/><br>Countersink <input type="checkbox"/><br>Cut Too Short <input type="checkbox"/><br>Instructions Incomplete/Unclear <input type="checkbox"/><br>Drill Holes <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/><br>Folio/Program <input type="checkbox"/><br>Grain <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Off-set <input type="checkbox"/><br>Mislabeled <input type="checkbox"/><br>Fit/Function <input type="checkbox"/><br>Misaligned/off center <input type="checkbox"/> | Positioned Wrong <input type="checkbox"/><br>Outside Dimensions <input type="checkbox"/><br>Over/Under tolerance <input type="checkbox"/><br>Part Incorrect <input type="checkbox"/><br>Part Lost/Missing <input type="checkbox"/><br>Part Moved <input type="checkbox"/><br>Drawing <input type="checkbox"/><br>Finish <input type="checkbox"/><br>Misread <input type="checkbox"/><br>Turning Sequence <input type="checkbox"/> |
| OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |